

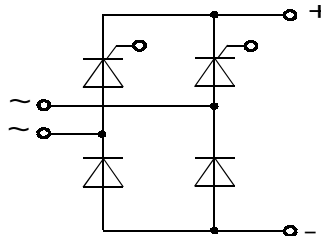
Single Phase Half Controlled Rectifier Bridge, B2HK PSBH 54

$$I_{dAV} = 56 \text{ A}$$

$$V_{RRM} = 800-1600 \text{ V}$$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
900	800	PSBH 54/08
1300	1200	PSBH 54/12
1500	1400	PSBH 54/14
1700	1600	PSBH 54/16



ECO-PAC™ 3

Symbol	Test Conditions	Maximum Ratings
I_{dAV}	$T_C = 85 \text{ °C}$; per module	56 A
I_{TSM}	$T_{VJ} = 45 \text{ °C}$ $t = 10 \text{ ms}$ (50 Hz), sine	550 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	600 A
	$T_{VJ} = 125 \text{ °C}$ $t = 10 \text{ ms}$ (50 Hz), sine	490 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	540 A
$\int i^2 dt$	$T_{VJ} = 45 \text{ °C}$ $t = 10 \text{ ms}$ (50 Hz), sine	1500 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	1490 A ² s
	$T_{VJ} = 125 \text{ °C}$ $t = 10 \text{ ms}$ (50 Hz), sine	1200 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	1210 A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125 \text{ °C}$ repetitive, $I_T = 50 \text{ A}$ $f=50\text{Hz}$, $t_p=200\mu\text{s}$	150 A/ μs
	$V_D=2/3V_{DRM}$ $I_G=0.3 \text{ A}$ non repetitive, $I_T = 1/2 I_{dAV}$ $di_G/dt=0.3\text{A}/\mu\text{s}$	500 A/ μs
	$T_{VJ} = 125 \text{ °C}$ $V_D=2/3V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	1000 V/ μs
P_{GM}	$T_{VJ} = 125 \text{ °C}$ $t_p=30\mu\text{s}$	$\leq 10 \text{ W}$
	$I_T=I_{TAVM}$ $t_p=300\mu\text{s}$	$\leq 5 \text{ W}$
P_{GAVM}		0.5 W
V_{RGM}		10 V
T_{VJ}		-40... + 125 °C
T_{VJM}		125 °C
T_{stg}		-40... + 125 °C
V_{ISOL}	50/60 Hz, RMS $t = 1 \text{ min}$	2500 V~
	$I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	3000 V~
M_d	Mounting torque (M4)	1.5 - 2.0 Nm
		14 - 18 lb.in.
Weight	typ.	46 g

Features

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- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering
- UL Release applied

Applications

- Supplies for DC power equipment
- Input rectifier for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Advantages

- Easy to mount with four screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Small and light weight

Data according to IEC 60747 refer to a single thyristor unless otherwise stated

Symbol	Test Conditions	Characteristic Value
I_D, I_R	$T_{VJ} = 125^\circ\text{C}, V_R = V_{RRM}, V_D = V_{DRM}$	≤ 5 mA
V_F, V_T	$I_T = 80$ A, $T_{VJ} = 25^\circ\text{C}$	≤ 1.64 V
V_{TO}	For power-loss calculations only	0.85 V
r_T		11 m Ω
V_{GT}	$V_D = 6$ V, $T_{VJ} = 25^\circ\text{C}$	≤ 1.5 V
	$T_{VJ} = -40^\circ\text{C}$	≤ 1.6 V
I_{GT}	$V_D = 6$ V, $T_{VJ} = 25^\circ\text{C}$	≤ 100 mA
	$T_{VJ} = -40^\circ\text{C}$	≤ 200 mA
V_{GD}	$T_{VJ} = 125^\circ\text{C}, V_D = 2/3 V_{DRM}$	≤ 0.2 V
I_{GD}	$T_{VJ} = 125^\circ\text{C}, V_D = 2/3 V_{DRM}$	≤ 5 mA
I_L	$T_{VJ} = 25^\circ\text{C}, t_p = 10\mu\text{s}, V_D = 6$ V $I_G = 0.45$ A, $di_G/dt = 0.45$ A/ μs	≤ 450 mA
I_H	$T_{VJ} = 25^\circ\text{C}, V_D = 6$ V, $R_{GK} = \infty$	≤ 200 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}, V_D = 1/2 V_{DRM}$ $I_G = 0.45$ A, $di_G/dt = 0.45$ A/ μs	≤ 2 μs
t_q	$T_{VJ} = T_{VJM}, I_T = 20$ A; $t_p = 200\mu\text{s}; di/dt = -10$ A/ μs	250 μs
	$V_R = 100$ V; $dv/dt = 15$ V/ $\mu\text{s}; V_D = 2/3 V_{DRM}$	
R_{thJC}	per thyristor; DC	0.8 KW
	per module	0.2 KW
R_{thJH}	per thyristor; DC	1.1 KW
	per module	0.183 KW
d_s	Creepage distance on surface (Pin to heatsink)	11.2 mm
d_A	Strike distance in air (Pin to heatsink)	11.2 mm
a	Max. allowable acceleration	50 m/s ²

Package style and outline

Dimensions in mm (1mm = 0.0394")

